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**INDUSTRY STANDARD OF THE
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**Calibration Specification for Tyre Uniformity Testing Machines
(English Translation)**

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Introduction

JJF 1001 "General Measurement Terms and Definitions", JJF 1059.1 "Measuring Uncertainty Evaluation and Expression", JJF 1071 "Rules for Compiling National Metrology and Calibration Specifications" and GB/T 6326 "Tire Terms and Definitions" together constitute the basic series of standards for the formulation of this specification.

The main technical reference for the preparation of this specification is GB/T 18506-2013 "Automobile Tire Uniformity Test Method" and HG/T 4799-2015 "Tire Uniformity Inspection Machine".

This specification is released for the first time.

Calibration specification for tire uniformity testing machine

1 Scope

This specification applies to the calibration of car tires and truck tire uniformity testing machines (hereinafter referred to as testing machines).

2 Reference documents this specification refers to the following documents.

GB/T 18506-2013 Test method for uniformity of automobile tires HG/T 4799-2015 tire uniformity inspection machine for dated reference documents, only the dated version applies to this specification; for undated reference documents, the latest version (including all amendments) is applicable to this specification.

3 Terms and units of measurement

3.1 Uniformity

Under static and dynamic conditions, tire circumferential characteristics are constant performance, including tire mass imbalance, dimensional deviation and force fluctuation.

Note: The uniformity of this specification refers only to the fluctuation of tire force.

[GB/T 18506-2013,3.1]

3.2 Taper effect

The lateral force deviation that does not change the direction of the tire rotation.

[GB/T 18506-2013,3.3]

3.3 First harmonic of radial force the maximum peak-to-peak value of the first harmonic of tire radial force fluctuations.

[GB/T 18506-2013,3.5]

3.4 First harmonic of lateral force the maximum peak-to-peak value of the first harmonic of tire lateral force fluctuations.

[GB/T 18506-2013,3.6] 4 overview the testing machine is used for fully automatic measurement of the uniformity index of car tires and truck tires, and can realize the Tire classification. The testing machine is mainly composed of tire lubrication device, conveying device, testing device and so on. Working principle of testing machine Management. After the tire is loaded and inflated, the drum is close to the tire (or the tire is close to the drum) and a certain load is applied to it.

Load, rotating the tire, due to factors such as the uneven material of the tire, causing the tire to produce fluctuations in radial force and lateral force.

This fluctuation is measured by the load cell and converted into an electrical signal. Through continuous measurement of the electrical signal, the computer system the electrical signal is processed to obtain various parameters of uniformity, which are displayed and recorded by the system. The principle of the testing machine is shown in Figure 1.